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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,773	12/01/2003	Jerome Chan Lee	57450-1161	3812

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EXAMINER	
YANG, RYAN R	
ART UNIT	**PAPER NUMBER**
2628	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/27/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/27/2007.

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Office Action Summary	Application No.	Applicant(s)	
	10/725,773	LEE ET AL.	
	Examiner	Art Unit	
	Ryan R. Yang	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *39* is/are allowed.

6)☒ Claim(s) *1-35,37 and 38* is/are rejected.

7)☒ Claim(s) *36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/3/2007 has been entered.

2. This action is responsive to communications: Amendment, filed on 12/22/2005. This action is final.

3. Claims 1-39 are pending in this application. Claims 1, 28, 30, 32, 38 and 39 are independent claims. In the Amendment, filed on 1/3/2007, claims 1, 11, 23, 27-33 and 36 were amended, and claims 38-39 were added.

4. This application claims Provisional Application No. 60/505,345, 60/505,346 and 60/505,344, all filed 11/29/2002.

5. The present title of the invention is "Method and system for scaling control in 3D displays ("Zoom Slider") as filed originally.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim1-35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guedalia et al (5,963,213) in view of Fleury (2003/0043170).

Regarding claim 1, Guedalia et al discloses that the claimed feature of a method for controlling the scaling of a 3D computer model in a 3D display system, comprising:

activating a zoom mode ["zooming"] (See Fig 6, col 1 line 46-47, col 12 line 28-29);

selecting a model zoom point [i.e. "point"; 72] (See col 12 line 46-57);

setting a zoom scaling factor [i.e. "zoom factor", "zoom level"] (See col 10 line 66-col 11 line 10, col 14 line 8-29); and

implementing a zoom operation and automatically moving the model zoom point from its original position towards an optimum viewing point according to a defined algorithm in response to the selected zoom point and the set scaling factor. (See Fig 6, col 3 line 7-19, col 3 line 35-48, col 12 line 46-57).

Guedalia et al does not specifically disclose a zoom operation that automatically moves from the original position towards "a system, application, or user defined optimum viewing point." However, this is known in the teaching of Fleury. Fleury discloses a method of moving from an original point to a destination POI (Figure 4; "FIG. 4 illustrates one example of a translation process in accord with the invention. A translation process moves a point P (x, y, z) by a distance D (.delta.x, .delta.y, .delta.z) to a new location P'(x', y', z'). Thus, P'(x', y', z')=P(x, y, z)+D(.delta.x, .delta.y, .delta.z). The process handler 104 (see FIG. 3) relays a translation (move) request to a translation subroutine 200, which then computes the effective POI displacement (step 201). The computation may take into account the scaling factor (zoom value 211) to determine the rate at which to perform the requested transformation (see a later section

for a discussion of the scale-dependent transformation). Once the amount of POI displacement is computed, the permissible POI location is then calculated (step 202) based on the path (reference shape) 212 that had been determined by the subroutine 101 (see FIG. 3). Once the POI 23 (see FIG. 2) is placed in the new location, the viewpoint (camera) is moved accordingly (step 203). At this stage the user-requested view is displayed in the viewing window and the POI-associated information is displayed (step 204). [27])

Thus, it would have been obvious to one skilled in the art to incorporate the teaching of Fleury into the teaching of Guedalia et al, in order to effectively provide better view of the user's interested portion of zoomed image, as such improvement is also advantageously desirable in the teaching of Guedalia et al for displaying the scaled image with optimized user's viewing position.

8. Regarding claim 2, Guedalia et al discloses that display system is stereoscopic. (See Fig 6)

9. Regarding claim 3, Guedalia et al discloses that said method is implemented by a user via a mouse or other 2D position calculating computer input device. (See col 1 line 46-47, col 12 line 46-48)

10. Regarding claim 4, Guedalia et al discloses method is implemented by a user via a sensor which can move in three dimensions. (See Fig 6, col 1 line 46-47, col 12 line 46-48)

11. Regarding claim 5, Guedalia et al discloses that selection of the model zoom point is effected by a user signaling when a cursor or other indicator appears in front of

the desired point on the displayed model. (See col 1 line 46-47, col 12 line 46-48, col 12 line 58-65)

12. Regarding claim 6, Guedalia et al discloses that selection of the model zoom point is effected by a user signaling when a tool moving in the 3D display has its tip at the desired point relative to the model. (See col 1 line 46-47, col 12 line 46-48, col 12 line 58-65)

13. Regarding claim 7, refer to the discussion for the claim 1 hereinabove, Fleury further discloses that the model zoom point is automatically selected as the nearest model point visible to the user along the z-axis of the display space, wherein the z-axis is set to run through an optimum viewing point. (See [27],[29],[32])

14. Regarding claim 8, refer to the discussion for the claim 1 hereinabove, Fleury further discloses that the model zoom point is automatically selected as a point in a crop box on the z-axis of the display space, wherein the z-axis is set so as to run through an optimum viewing point. (See [27],[29],[32])

15. Regarding claim 9, refer to the discussion for the claim 1 hereinabove, Fleury further discloses that model zoom point is one of the nearest such point to the user's viewpoint, the farthest such point from the user's viewpoint, and the centroid of a collection of such points that are in the crop box and on the z-axis. (See [27],[29],[32])

16. Regarding claim 10, Guedalia et al discloses that the model zoom point is selected as a point in a crop box and in a magnification region. (See col 1 line 46-47, col 12 line 46-48)

17. Regarding claim 11, Guedalia et al discloses that the model zoom point is also a visible model point which is nearest to either the optimum viewing point or a user's viewpoint. (See col 1 line 46-47, col 12 line 46-48)

18. Regarding claims 12-14, Guedalia et al discloses that the magnification region is made visible to a user as an opening in a contextual structure, which contextual structure is a plane with a hole, wherein the hole's shape is substantially one of a circle, an oval, an ellipse, a square, a rectangle, a triangle, a trapezoid, or any regular polygon. (See Fig 6; Also See Fleury Fig 1-2, Fig 9)

19. Regarding claim 15, refer to the discussion for the claim 1 hereinabove, Fleury further discloses that a user causes the motion of the displayed model or models necessary to produce said visible model point that is inside the crop box and on said z-axis. (See [27],[29],[32])

20. Regarding claim 16, Guedalia et al discloses that the user causes said motion of the displayed model or models by at least one of grasping with a three-dimensional tool and dragging with a mouse. (See col 1 line 46-47, col 12 line 46-48)

21. Regarding claim 17, Guedalia et al discloses that the location of said model zoom point is indicated to a user by the display of a small structure centered thereon. (See col 1 line 46-47, col 12 line 46-48)

22. Regarding claim 18, Guedalia et al discloses that small structure is a small cross composed of lines and triangles, including or not including as a visible point the model zoom point. (See col 1 line 46-47, col 12 line 46-48)

23. Regarding claim 19, Guedalia et al discloses that the attention of the user is directed to the location of the model zoom point by a larger displayed contextual structure. (See col 1 line 46-47, col 12 line 46-48)

24. Regarding claim 20, Guedalia et al discloses that contextual structure is a plane with a hole surrounding the model zoom point. (See col 1 line 46-47, col 12 line 46-48)

25. Regarding claim 21, Guedalia et al discloses that plane is so rendered in a stereoscopic display as to appear to be translucently visible through other structures imaged in the display, regardless of whether said other structures are otherwise shown as opaque or translucent. (See Fig 6, col 1 line 46-47, col 12 line 28-29, col 12 line 46-48)

26. Regarding claim 22, Guedalia et al discloses that the zoom operation can be set to be implemented stepwisely or smoothly, as controlled by the user. (See Fig 6, col 1 line 46-47, col 12 line 28-29, col 12 line 46-48)

27. Regarding claim 23, Fleury discloses that each of the setting of the zoom scale factor, said stepwise or smooth implementation of the zoom operation, and user definition of an optimum viewing point can be controlled by one or more of the user's voice, a mouse, a 3D tool or other device, a slider, a wheel, and increment/decrement buttons. ([0002], line 16).

Thus, it would have been obvious to one skilled in the art to incorporate the teaching of Fleury into the teaching of Guedalia et al, in order to effectively provide better view of the user's interested portion of zoomed image.

28. Regarding claim 24, Guedalia et al discloses that the zoom operation and the motion of the model zoom point towards the optimum viewing point are implemented substantially simultaneously. (See Fig 6, col 1 line 46-47, col 12 line 28-29, col 12 line 46-48)

29. Regarding claim 25, Guedalia et al discloses that the correspondence between the degree of zoom and the motion of the model zoom point is linear, adjusted to display the model without zoom with the model zoom point at its originally selected location and to display the model at a maximum degree of zoom with the model zoom point at the optimum viewing point. (See Fig 6, col 1 line 46-47, col 12 line 28-29, col 12 line 46-48)

30. Regarding claim 26, Guedalia et al discloses automatically activating a clipping box in the display for values above a defined threshold of a system load estimate. (See Fig 6, col 1 line 46-47, col 12 line 28-29, col 12 line 46-48)

31. Regarding claim 27, Guedalia et al discloses that moving of the model zoom point towards the optimum viewing point is immediate to said optimum viewing point. (See Fig 6, col 1 line 46-47, col 12 line 28-29, col 12 line 46-48)

32. Regarding claim 28, refer to the discussion for the claim 1 hereinabove, Guedalia et al discloses that the claimed feature of a method of resizing 3D computer generated models in a 3D display system, comprising: determining a position of a center of scaling point in response to user input (See col 12 line 46-57); determining a scaling factor to be applied to one or more 3D models in response to user input (See col 10 line 66-col 11 line 10, col 14 line 8-29); and simultaneously implementing the zoom operation and

automatically moving the position of the center of scaling point from its original position a certain portion of a distance towards or away from an optimum viewing point depending upon said scaling factor. (See Fig 6, col 3 line 7-19, col 3 line 35-48, col 12 line 46-57).

Guedalia et al does not specifically disclose a zoom operation that automatically moves from the original position towards "a system, application, or user defined optimum viewing point." However, this is known in the teaching of Fleury. Fleury discloses a method of moving from an original point to a destination POI (Figure 4; "FIG. 4 illustrates one example of a translation process in accord with the invention. A translation process moves a point P(x, y, z) by a distance D(.delta.x, .delta.y, .delta.z) to a new location P'(x', y', z'). Thus, P'(x', y', z')=P(x, y, z)+D(.delta.x, .delta.y, .delta.z). The process handler 104 (see FIG. 3) relays a translation (move) request to a translation subroutine 200, which then computes the effective POI displacement (step 201). The computation may take into account the scaling factor (zoom value 211) to determine the rate at which to perform the requested transformation (see a later section for a discussion of the scale-dependent transformation). Once the amount of POI displacement is computed, the permissible POI location is then calculated (step 202) based on the path (reference shape) 212 that had been determined by the subroutine 101 (see FIG. 3). Once the POI 23 (see FIG. 2) is placed in the new location, the viewpoint (camera) is moved accordingly (step 203). At this stage the user-requested view is displayed in the viewing window and the POI-associated information is displayed (step 204). [27])

Thus, it would have been obvious to one skilled in the art to incorporate the teaching of Fleury into the teaching of Guedalia et al, in order to effectively provide better view of the user's interested portion of zoomed image, as such improvement is also advantageously desirable in the teaching of Guedalia et al for displaying the scaled image with optimized user's viewing position.

33. Regarding claim 29, Guedalia et al discloses that simultaneously with implementation of the zoom the model zoom point is immediately moved to an optimum viewing point. (See Fig 6, col 3 line 7-19, col 3 line 35-48, col 12 line 46-57)

34. Regarding claims 30 and 31, claims 30-31 are similar in scope to the claims 28-29, and thus the rejections to claims 28-29 hereinabove are also applicable to claims 30-31.

35. Regarding claims 32-34, claims 32-34 are similar in scope to the claims 2,12 and 28-29, and thus the rejections to claims 2,12 and 28-29 hereinabove are also applicable to claims 32-34.

36. Regarding claim 35, Guedalia et al. discloses said defined algorithm specifies a translation of the model space within the display space (see column 5, line 66- column 6, line 19).

37. Regarding claim 37, Guedalia et al. discloses the zoom operation and corresponding automatic moving of the model zoom point are effected at least one of substantially instantaneously, at a predetermined rate, and at a rate controlled by a user (see column 5, line 57-61; since the viewing parameters are dynamic, the effects are considered substantially instantaneous, column 5, line 42-43).

38. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guedalia and Fleury as applied to claim 1 above, and further in view of Moezziet al (US 5,850,352).

Regarding claim 38, Guedalia and Fleury disclose all the elements as in claim 1 except "implementing a zoom operation and automatically moving the model zoom point from its original position towards an optimum stereoscopic viewing point", however, this is known in the art as taught by Moezzi et al, hereinafter Moezzi. Moezzi discloses a stereoscopic video system in which a best (optimum) view is determined ("A View Selector Module- used to compute and select "best views" and further discussed with the model and a user interface subsystem to select appropriate views in response to user or system input", column 26, line 29-33; and "the synthesis of virtual video images/virtual television pictures of a real-world scene wherein the pictures are so synthesized to user-specified parameters of presentation, e.g. panoramic, or at magnified scale if so desired by the user", column 1, line 52-56).

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Moezzi into Guedalia and Fleury because Guedalia and Fleury disclose a method of controlling 3-D model and Moezzi discloses the 3-D scene could be manipulated for a best view in order a better view of the scene.

Allowable Subject Matter

39. Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 39 is allowed.

The following is a statement of reasons for the indication of allowable subject matter:

As per claims 36 and 39, the closest prior art by Guedalia et al. or or Fleury do not explicitly disclose a translation algorithm of specified limitations.

Response to Arguments

40. Applicant's arguments filed 1/13/2007 have been fully considered but they are not persuasive.

As per claim 1, applicant does not explicitly disclose "automatically moving the model zoom point from its original position towards a system, application, or user defined optimum viewing point". In reply, Examiner contents Fleury teaches such feature by user input (Figure 3, item 103), compute effective POI displacement (Figure 4, item 201), and move the viewpoint (Figure 4, item 203), where the new point is the optimum viewpoint. Applicant argues the features of the invention that Guedalia and Fleury does not have, however, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

41. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Inquiries

42. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan R. Yang whose telephone number is (571) 272-7666. The examiner can normally be reached on M-F 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (571) 272-7664. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan Yang
Primary Examiner
March 19, 2007